JUN/FY06

TOBYHANNA ARMY DEPOT

Pennsylvania

Army Defense Environmental Restoration Program Installation Action Plan

FINAL 15 AUGUST 2006

Table of Contents

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Tobyhanna Army Depot (TYAD), Army Materiel Command (AMC), executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following agencies contributed to the formulation and completion of this IAP:

Company/Installation/Branch

Engineering & Environment, Inc. (EEI) for USAEC
TYAD
USAEC

Acronyms & Abbreviations

AEDB-R	Army Environmental Database – Restoration
AMC	Army Materiel Command
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
BRAC	Base Realignment and Closure
C-E LCMC	Communication - Electronics Life Cycle Management Command
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
COE	Corps of Engineers (also USACE)
DA	Department of Army
DERA	Defense Environmental Restoration Account (now called ER,A)
DERP	Defense Environmental Restoration Program
DD	Decision Document
DoD	Department of Defense
D/EL	Directorate of Public Works
DSERTS	Defense Site Environmental Restoration Tracking System (now AEDB-R)
ER,A	Environmental Restoration, Army (formerly called DERA)
ERA	Ecological Risk Assessment
EPA	Environmental Protection Agency
FFA	Federal Facility Agreement
FFSRA	Federal Facility Site Remediation Agreement
FS	Feasibility Study
FY	Fiscal Year, Federal Government (1 October to 30 September)
GAC	Granular Activated Carbon
GW	Ground water
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
MCL	Maximum Contaminant Level
MMRP	Military Munitions Response Program
NFRAP	No Further Remedial Action Planned
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OU	Operable Unit
PA	Preliminary Assessment
PADEP	Pennsylvania Department of Environmental Protection
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene
pH	Potential Hydrogen
POL	Petroleum, Oil & Lubricants
PP	Proposed Plan
ppb	Parts per Billion
RA	Remedial Action
RA(O)	Remedial Action (Operation)

Acronyms & Abbreviations

RA(C)	Remedial Action (Construction)
RAB	Restoration Advisory Board
RAD	Radiation
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
REM	Removal
RI	Remedial Investigation
RFA	RCRA Facility Assessment
RI/FS	Remedial Investigation/Feasibility Study
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compounds
SWMA	Solid Waste Management Act
SWMU	Solid Waste Management Unit
S&A	Supervision and Administration
TBAD	Tobyhanna Army Depot
TBD	To Be Determined
TCE	Trichloroethylene
TRC	Technical Review Committee
TYAD	Tobyhanna Army Depot
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Center (formerly called USATHMA)
USAEHA	United States Army Environmental Hygiene Agency (now called CHPPM)
USATHAMA	United States Army Toxic and Hazardous Material Agency (now called AEC)
USCHPPM	United States Center for Health Promotion and Preventive Medicine (formerly called USAEHA)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WWI	World War I
WWII	World War II

Installation Information

Installation Locale: Tobyhanna Army Depot (*TYAD*) is located in the Pocono Mountains of northeastern Pennsylvania, approximately 15 miles southeast of Scranton, PA, in Coolbaugh Township, Monroe County. The installation covers approximately 2.2 square miles, measuring 1.6 miles east to west and 2.2 miles north to south at the widest point. The area surrounding TYAD is rural with the village of Tobyhanna bordering the installation at the southeast corner. Tobyhanna State Park and Gouldsboro State Park are adjacent to the installation on the northeast and northwest sides, respectively. See figure 1 for a map of the installation.

Installation Mission: TYAD is the Defense Department's largest facility for the overhaul, repair, fabrication and systems integration of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems. Supported systems include radios, radars, satellite communications, airborne surveillance and navigation, aircraft survivability equipment and tactical missile guidance and control systems. The depot also operates more than 20 forward repair activities at major installations and in support of deployed forces.

Lead Organization: Army Materiel Command (AMC)

Lead Executing Agencies:
TYAD, Environmental Management Division
US Army Corps of Engineers, Baltimore District

Regulatory Participation:
Federal: US Environmental Protection Agency (EPA), Region III
State: Pennsylvania Department of Environmental Protection

***National Priorities List (NPL) Status*:** On NPL-199008, HRS Score 38.0

Date for Construction Completion: 2005

Projected Date for NPL Removal: 2021

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status:
RAB established in 1995.

Installation Program Summaries:

Installation Restoration Program (IRP)

Primary Contaminants of Concern: Solvents, Heavy Metals
Affected Media of Concern: Groundwater
Estimated Date for Response Complete (RC): 2001
Funding to Date: (up to FY05) $14,729,000
Current year funding (FY06): $210,000
Cost-to-Complete: (FY07+) $2,277,000

Military Munitions Response Program (MMRP)

Primary Contaminants of Concern: Metals, munitions, explosives, explosive residues
Affected Media of Concern: Soil
Estimated date for RC: 2014
Funding to Date: (up to FY05) $469,450
Current year funding (FY06): $3,000
Cost-to-Complete: (FY07+) $1,583,000

Cleanup Program Summary

Installation Historic Activity:

The Army's association with Tobyhanna dates back to 1912, when a field artillery unit trained on land leased from a local resident. The following year, the Army began to purchase land for a permanent field artillery and machine gun training camp. The camp was known by several names in its early years, including Camp Summerall, Camp Tobyhanna, and the Tobyhanna Military Reservation. The reservation became an ambulance and tank regiment training center and an ordnance storage depot during World War I (WWI.)

Use of the camp declined after WWI but the National Guard continued to train here through the 1920s. From 1932 to 1938, the area was used as a camp by the Civilian Conservation Corps. From 1938 to 1941, the area was used by cadets from West Point for field artillery training. In 1942, the installation was reactivated as an Army/Air Force Service Unit Training Center. The area was also converted to a storage and supply area for gliders and other equipment of the Air Service Command in 1944. The installation also housed approximately 200 German prisoners of war from January through December 1945. The enlisted prisoners were contracted to harvest ice and farm crops while confined at Tobyhanna. The installation was deactivated after World War II (WWII.)

The Commonwealth of Pennsylvania purchased the Tobyhanna site from the War Assets Administration in 1949. The Department of Forests and Waters and the Pennsylvania Game Commission maintained the property from 1949 to 1951. During January 1951, 2.2 square miles were obtained by the US Army Signal Corps for depot construction. Construction of the depot was performed by a civilian contractor. This contractor utilized the southeastern corner of TYAD as a base of operations/equipment staging area. The balance of the tract remained state-owned with the Federal Government exercising recovery rights. In the following years, up to and including the present, much of this tract has been designated state game lands and parks.

Tobyhanna Signal Depot was established as a Class II installation during February 1953, with an assigned supply mission. In August 1962, the depot was re-designated and transferred to the US AMC. Since 1962, TYAD has assumed a variety of missions ranging from the US Department of Defense household goods movement and storage to maintaining the Army's central file of motion pictures and distribution of audiovisual materials.

Cleanup Program Summary

Installation Restoration Program

- Prior Year Progress: Continue Long-Term Management (LTM) at four Sites
- Future Plan of Action: LTM until all solvent contamination is below Maximum Containment Levels

Military Munitions Response Program (MMRP)

- Prior Year Progress: Phase 3 Range inventory was completed and a total of six possible MMRP sites identified. A site investigation was performed in FY05 that indicated at four sites that no further action was necessary and recommended institutional controls as described in the Record of Decision (ROD)for Operable Unit 4, be used for the remaining two sites.

- Future Plan of Action: Ensure that ROD conditions continue to be met

TOBYHANNA ARMY DEPOT

Installation Restoration Program

IRP Summary

***Total AEDB-R IRP Sites/AEDB-R Sites with Response Complete*:** 67/63

Different Site Types:

1 Landfill	1 Surface Disposal Area
2 Disposal Pit/Dry Well	2 Burn Area
4 Spill Site Area	1 Fire/Crash Training Area
18 Storage Area	1 Surface Runoff
27 Waste Treatment Plant	1 Contaminated Ground Water
1 Unexploded Munitions/ Ordnance	6 Other
1 Firing Range	1 Underground Storage Tank

Most Widespread Contaminants of Concern: Solvents, VOCs, Heavy Metals

Media of Concern: Groundwater

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):
Waterline Extension (1992) Total Cost: $376.7K
PCB Soil Removed, OU 2 (1994) Total Cost: $14.0K
Soil Source Removal, OU 1 (1995) Total Cost: $380.0K
Oakes Swamp, Clean Up (1997) Total Cost: $66.0K
Off-Post Monitor Wells (1998) Total Cost: $32.0K
Sewage Drying Bed Removal (1999) Total Cost: $100.0K

Total IRP Funding:

Prior years (up to FY05):	$14,729,000
Current year funding (FY06):	$ 210,000
Future Requirements (FY07+):	$ 2,277,000
Total:	$17,216,000

Duration of IRP:
Year of IRP Inception: 1991
Year of IRP RC: 2005
Year of IRP Completion including Long-Term Management (LTM): 2021

Contamination Assessment Overview

An Initial Installation Assessment was completed in January 1980 and it did not recommend that any follow-on investigations be conducted. In 1981, TYAD drinking water wells were tested for trichloroethylene (TCE). Low levels were found in Well No. 3. The installation installed a charcoal filter on Well No. 3 in 1991 and has been testing the water bimonthly for volatile organic compounds (VOCs) since. In 1989, the charcoal filter on Well No. 3 was replaced by an air stripper. The concentration of TCE in the influent had been consistently in the 8 to 12 parts per billion (ppb) range. Also in 1981, Monroe County had Pennsylvania Department of Environmental Protection (PADEP) sample residential wells in the village of Tobyhanna and found low levels of TCE, which were below the PADEP Maximum Contaminant Level (MCL) of 45 ppb. In 1986, Monroe County had the PADEP resample the same residential wells, and results indicated that low levels of TCE were still present in the groundwater. However, in 1988 the EPA lowered the TCE MCL to 5 ppb. In January 1988, the Initial Installation Assessment for TYAD was updated. It recommended that a follow-on investigation be conducted for the TCE found in the domestic wells.

In 1988, the US Army Toxic and Hazardous Materials Agency (USATHAMA), currently the US Army Environmental Center (AEC), initiated a Remedial Investigation/Feasibility Study (RI/FS). The RI report indicated Area B (AEDB-R site TBAD-007), an area used for staging materials during the construction of the depot, as the source of groundwater contamination in off-post residential wells and TYAD Well No. 3. Soil and groundwater contamination also existed at Area A (TBAD-004), but contamination was confined within the depot boundaries. The Areas A and B are now collectively defined as Operable Unit (OU) 1. The Endangerment Assessment (EA) report conducted in 1992 concluded that a low level of risk to human health and the environment existed and that the no-action alternative was not viable. The preferred alternative in the Feasibility Study (FS) report consisted of passive soil volatilization (excavating and tilling in a controlled atmosphere) and extraction and treatment of groundwater. In April 1990, an effort was initiated to install additional groundwater monitoring wells, pump test wells, and observation wells, perform pump tests, conduct groundwater, surface water, and sediment sampling, perform a wetlands survey, and address EPA Region III comments on the RI, EA, and FS. The EPA approved the OU 1 RI Addendum, EA, and FS reports in February 1993.

In September 1993, the OU 1 proposed remedial action plan was submitted for public review and comment. The public review and comment period closed in December 1993. The OU 1 Record of Decision (ROD) was not finalized due to an Army/Regulatory difference in the interpretation of the state's Applicable, Relevant, and Appropriate Requirement, which defined the groundwater treatment level as background. This issue was elevated to the Deputy Assistant Secretary of the Army (Environment, Safety & Occupational Health) for resolution. However, this issue was resolved when Pennsylvania's Land Recycling and Environmental Remediation Standards Act — Act 2 of 1995 — was signed into law, which establishes specific cleanup levels for soil and groundwater. Under this Act, the state cleanup levels for groundwater became the same as the Federal MCL, which the Army had agreed to. Although the ROD had not been finalized, the Army began Remedial Design (RD) work. As part of RD, preliminary design engineering studies for groundwater and soil treatment were initiated.

IRP Contamination Assessment

Preliminary results from these field investigations indicate that the extent of contamination was significantly smaller than previously noted.

The Army evaluated this information and determined that the recommended response actions should be revised. In July 1995, the Army provided the regulatory agencies with a revised groundwater treatment strategy.

In April 1996, TYAD, EPA, and PADEP reached an agreement regarding soil and groundwater treatment at OU 1. The remediation for groundwater would include Natural Attenuation, continued monitoring, institutional controls, and site condition review at 5-year intervals. In regard to soils, TYAD completed a source soil removal action at Area B in August 1995. This action eliminated any need for further action regarding the treatment of soil. A Natural Attenuation ROD was signed between the Army and EPA in 1997.

In 1996, No Further Action RODs were signed for OU 2 (TBAD-063), a former PCB substation site, and OU 3 (TBAD-037 and –038), two former Hazardous Waste Facilities. A Verification Study (VS) was completed in February 1996 providing environmental characterization data for 11 Areas of Concern (AOCs) (TBAD-001,-002,-005,-008,-032,-042,-043,-058,-059,-061,-063). The VS recommends no further action/investigation at 5 AOCs (TBAD-002,-005,-032,-043,-058), bringing the total of no action AOCs at TYAD to 57. An Ecological Risk Assessment (ERA) addressed the remaining 6 sites. The 2 AOCs referred to as OU 1 were not part of the VS. The 65 AOCs are a combined list of all AOCs identified in the Evaluation of Solid Waste Management Units Report for TYAD, prepared by the US Army Environmental Hygiene Agency (USAEHA), currently the USACHPPM, dated March 1990, and the Phase II RCRA Facility Assessment Report for TYAD, prepared by A.T. Kearney, Inc., and Baker/TSA, Inc., and dated May 1987. Table I lists all previous studies completed at TYAD.

A draft ERA was completed and submitted to the regulatory agencies for review in 2000. The ERA systematically addressed and documented potential environmental risks as a result of past known or suspected contaminant releases. The ERA was completed in FY00.

The RI report for AOC 1 (TBAD-001), the Inactive Sanitary Landfill, was finalized. Both the EPA and PADEP have concurred with the findings and recommendations in the report. The report recommended additional monitoring wells off-post and long-term monitoring for VOCs. Based upon the report's recommendations, four additional monitoring wells have been established in adjacent State Park property.

In FY98, TYAD and EPA signed a Closeout Document for 35 No Further Action AOCs (TBAD-003,-005,-006,-009,-010,-011,-012,-013,-014,-015,-016,-017,-018,-020,-021,-022,-023,-024,-025,-026,-027,-028,-029,-030,-031,-034,-035,-046,-053,-054,-056,-057,-060,-062,-065).

The Remedial Design Document for OU 1 (TBAD-004 and –007) was finalized.

IRP Contamination Assessment

This document was prepared to be consistent with the ROD for OU 1 that provided for natural attenuation of groundwater and no action for soil. In addition, a Community Relations Plan was completed in FY98.

In FY99, TYAD and EPA, signed a Closeout Document for 18 No Further Action AOCs (TBAD-002,-019,-033,-036,-039,-040,-041, -042,-043,-044,-045,-047,-048,-049,-050,-051,-052,-058).

In FY00, a Health Risk Assessment and a Focused Feasibility Study was prepared for the Inactive Sanitary Landfill (TBAD-001). Also, an Engineering Evaluation/Cost Estimate for the UXO Area (TBAD-055) was completed. RODs were completed for AOCs in TBAD-001 and -055.

In 2001, TYAD became the first federal facility in the Environmental Protection Agency (EPA) Region III to achieve “Partial Delisting”. Sixty-two of the original 65 Areas of Concern were removed from the National Priority List. The remaining three sites require Long-term Groundwater Monitoring. Groundwater samples will be collected twice a year for several years and will be analyzed to monitor progress of natural attenuation. The goal to delist was set by TYAD, the EPA and the PADEP for 2001. This goal was achieved through excellent partnering between the three agencies

IRP Exit Strategy: Continue groundwater monitoring through 2021 when regulatory approval to discontinue monitoring will be requested.

Previous Studies

1977
- Evaluation of the impact of the Tobyhanna Army Depot Landfill on ground-water resources, A.W. Martin Associates, Inc., Dec

1980
- Installation Assessment of TYAD, Report Number 159, US Army Toxic and Hazardous Materials Agency (USATHAMA), Jan
- Environmental Assessment of TYAD Landfill, Spotts, Stevens and McCoy, Inc., May
- Water Quality Evaluation, Barney's Lake, Spotts, Stevens and McCoy, Inc., Dec

1981
- Water Quality Monitoring Consultation No. 31-62-0109-82, US Army Environmental Hygiene Agency, Oct

1982
- Water Quality Bioassay Study No. 32-24-0332-82, Permit Appeal, US Army Environmental Hygiene Agency, November 81-April 82

1983
- Revised Potable/Recreational Water Quality Survey No. 31-61-0118-83, US Army Environmental Hygiene Agency, March-April

1985
- April 1985, Water Quality Engineering Special Study No. 32-61-0138-85, US Army Environmental Hygiene Agency, Apr
- Hazardous Waste Study No. 37-26-0596-86, Soil Sampling at Sludge Storage Site, US Army Environmental Hygiene Agency, Nov

1986
- Phase I Water Quality Engineering Study No. 32-24-0795-87, Evaluation of Metal Finishing Wastewater Pretreatment Plant NPDES Permit Excesses (High Cadmium Levels), US Army Environmental Hygiene Agency, Sep
- Hazardous Waste Study No. 37-26-1397-87, Soil and Surface Water Sampling at Sludge Storage Site, US Army Environmental Hygiene Agency, Oct

1987
- Potable/Recreational Water Quality Engineering Survey No. 31-61-0176-87, US Army Environmental Hygiene Agency, Jan
- Phase II RCRA Facility Assessment Report for the TYAD, PAD 5213820892, A.T. Kearney, Inc. and Baker/TSA, Inc., May

Previous Studies

1988
- Final Update of the Initial Installation Assessment of TYAD, Environmental Science and Engineering, Inc. (ESE), Jan
- Final Report of the Study of Storm water Runoff from Coal Piles at the TYAD, Environmental Science and Engineering, Inc. (ESE), Apr
- Remedial Investigation/Feasibility Study (RI/FS) at TYAD Final RI Report A011, Environmental Science and Engineering, Inc. (ESE), Dec

1989
- RI/FS at TYAD Final Focused Remedial Alternative Evaluation, Spotts, Stevens and McCoy, Inc., Mar
- Water Quality Biological Study No. 32-24-0938-90, Toxicity Identification Evaluation, US Army Environmental Hygiene Agency, March-October
- Industrial Radiation study No. 27-43-8878-90, US Army Environmental Hygiene Agency, Jun Coolbaugh Township Perspective; Groundwater Contamination Site, TYAD and Adjacent Civilian Land Within Coolbaugh Township, Monroe County, Pennsylvania, C.W. Dennis, Chairman and Coolbaugh Township Municipal Staff, Jul
- Hazardous Waste Management Study No. 37-26-8800-90, Investigation of Potential Soil Contamination at the Electrical Substation No. 26 and Used Oil/Solvent Storage Areas, US Army Environmental Hygiene Agency, Aug

1989
- Investigation of Fish Kill in Oakes Swamp, US Army Environmental Hygiene Agency, Nov
- Wastewater Engineering Consultation No. 32-61-0162-90, US Army Environmental Hygiene Agency, Nov

1990
- Ground water Quality Survey No. 38-26-K914-90, Evaluation of Solid Waste Management Units, US Army Environmental Hygiene Agency, Mar

1991
- Wastewater Management Survey No. 32-61-0183-91, US Army Environmental Hygiene Agency, Jun
- Receiving Water Biological Study No. 32-24-HD57-91, Hydrologic Considerations and Cursory Benthic Macroinvertebrate Investigation Hummler Run, US Army Environmental Hygiene Agency, Jun
- Final Field Investigation Repot, Tobyhanna Army Depot, Coolbaugh Township, Monroe County, Pennsylvania, NUS Corporation, Aug

1992
- Final Engineering Report for TYAD, Coolbaugh Township Monroe County, Pennsylvania, Environmental Science and Engineering, Inc. (ESE), Mar
- Water Quality Survey No. 31-2-0349-92, US Army Environmental Hygiene Agency, Mar-Apr
- RI/FS at TYAD Draft Final RI Addendum, Environmental Science and Engineering, Inc. (ESE), Dec

1992, continued
- RI/FS at TYAD Draft Final Endangerment Assessment Report, Environmental Science and Engineering, Inc. (ESE), Dec
- RI/FS at TYAD Draft Final S Report for the Areas A and B Operable Unit, Environmental Science and Engineering, Inc. (ESE), Dec

1993
- Final Field Trip Report, Area A Sampling, Halliburton NUS Environmental Corporation, Feb Final Proposed Remedial Action Plan for Operable Unit 1 at TYAD, Environmental Science and Engineering, Inc. (ESE), Sep

1996
- Final Monitoring/Residential Well Sampling Program and Verification Studies, Technical Report, ELIN A009, Environmental Science and Engineering, Inc. (ESE), Mar
- Record of Decision Operable Unit 3, Tobyhanna Army Depot, Tobyhanna Army Deport/US Environmental Protection Agency, Jul
- Record of Decision Operable Unit 2, Tobyhanna Army Depot, Tobyhanna Army Deport/US Environmental Protection Agency, Sep

1997
- Final Ecological Risk Assessment Technical Report, ELIN A004, Environmental Resources Management, Inc. (ERM), Jan
- Final Remediation Investigation, AOC 1, Inactive Sanitary Landfill Technical Report, ELIN A009, Environmental Resources Management, Inc. (ERM), Feb
- Final Remedial Investigation, AOC #1-Inactive Sanitary Landfill Technical Report, ELIN A009, Environmental Resources Management, Inc. (ERM), Aug
- Final Tobyhanna Army Depot Operable Unit 1 (Areas A and B) Record of Decision, Environmental Science and Engineering, Inc. (ESE), Sep

1998
- Final Closeout Document for 35 No Further Action Areas of Concern, Tobyhanna Army Deport/US Environmental Protection Agency, Feb
- Final Community Relations Plan for Tobyhanna Army Depot, R.F. Weston, Inc, Nov
- Final Remedial Design for Operable Unit 1, (Areas A and B) Tobyhanna Army Depot, R.F. Weston, Inc, Dec

1999
- Final Report Construction Support, Tobyhanna Army Depot, Human Factors Applications, Inc., Feb
- Final 1998 Annual Performance Evaluation, Tobyhanna Army Depot, Monitor/Residential Well Sampling Program Operable Unit #1, R.F. Weston, Inc, May
- Final Closeout Document for 18 No Further Action Areas of Concern, Tobyhanna Army Deport/US Environmental Protection Agency, Sep

Previous Studies

2000
- Engineering Evaluation/Cost Analysis, Area of Concern 55, PMC Environmental, Apr
- Focus Feasibility Study, Area of Concern #1, PMC Environmental, Jul
- Final Closeout Document for 5 No Further Action and Areas of Concern, Tobyhanna Army Deport/US Environmental Protection Agency, Sep
- Record of Decision, Operation Unit 4, Tobyhanna Army Deport/US Environmental Protection Agency, Sep
- Record of Decision, Operation Unit 5, Tobyhanna Army Deport/US Environmental Protection Agency, Sep

2001
- Partial Delisting of TYAD, EPA, Oct

2002
- 5-year Review Report for Operable Units 1, 4 & 5, EPA, Sep

TOBYHANNA ARMY DEPOT

Installation Restoration Program
Site Descriptions

TBAD-001
SANITARY LANDFILL 1963

SITE DESCRIPTION

This site is adjacent to the rail classification yards near the western boundary of the installation. The landfill is approximately 2,000 feet by 600 feet. It was operated from 1963 to 1979 and was reported to have received all types of wastes generated at TYAD, including plating wastes and sludges, sewage treatment plant (STP) sludge, ashes from trash burning pits, construction rubble, paints, solvents, oils, sanitary wastes, and pesticide containers.

Groundwater at this site appears to have been affected by previously disposed waste materials. A RI was completed in 1997 recommending establishment of off-post monitoring wells to determine the extent of possible contamination. The wells were placed in State Park land in 1998. In addition, an ERA has been completed and submitted for regulatory review in 1998.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Solvents, Heavy Metals

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197904	198001
SI	199003	199007
RI/FS	199108	200004
LTM	200010	202102

RC DATE: 200004

CLEANUP STRATEGY

LTM and 5-year site condition reviews until 2021 are conditions of the ROD. A site closure report will be completed at the end of the monitoring period to request regulator approval to discontinue monitoring. After regulator approval for no further action is received, groundwater monitoring wells will be legally abandoned.

TBAD-004
BURNING AREAS E/NE OF BARNEY'S LAKE

SITE DESCRIPTION

This area is in the southeast corner of the depot. The site is 1,250 feet by 400 feet. It was used in the 1950s to early 1960s. Past operations included the excavation of trenches, burning of wastes, and in-place burial of ash residue.

This site is directly adjacent to TBAD-007, which was determined to be the source of the groundwater contamination. Sampling was completed that indicated levels of contamination below MCLs in the soil.

The ROD was signed in 1997 and indicated that long-term performance monitoring with 5-year site condition reviews was the approved remedy for the groundwater contamination.

STATUS

REGULATORY DRIVER: CERCLA

RRSE RATING: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197904	198801
SI	199003	199007
RI/FS	198707	199106
IRA	199012	199106
RD	199801	199812
RA(C)	199710	199812
LTM	199812	202102

RC DATE: 199812

CLEANUP STRATEGY

LTM and 5-year site condition reviews until 2021 are conditions of the ROD. A site closure report will be completed at the end of the monitoring period to request regulator approval to discontinue monitoring. After regulator approval for no further action is received, groundwater monitoring wells will be legally abandoned.

TBAD-007
AREA B, STAGING AREA

SITE DESCRIPTION

This site is located in the southeast corner of the installation, just south of Area A (TBAD-004) and southwest of the700-series buildings. The entire area is approximately 320 feet by 350 feet. This area was used for drum staging and disposal during the construction of the present depot in the1950s. Contamination of off-post drinking water sources has been attributed to disposal at this site. Soil excavation began in 1990 to extend water lines for 23 residents and one business surrounding the installation. Additional soil removal and several 55-gallon drums were removed in August 1995.

The ROD was signed in 1997 and indicated that monitored natural attention with 5-year site condition reviews was the approved remedy.

STATUS

REGULATORY DRIVER: CERCLA

RRSE RATING: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	199003	199007
SI	199003	199007
RI/FS	199008	199106
RD	199801	199812
IRA	199012	199106
RA(C)	199710	199812
LTM	199812	202102

RC DATE: 199812

CLEANUP STRATEGY

LTM and 5-year site condition reviews until 2021 are conditions of the ROD. A site closure report will be completed at the end of the monitoring period to request regulator approval to discontinue monitoring. After regulator approval for no further action is received, groundwater monitoring wells will be legally abandoned.

TBAD-067
U AREA

SITE DESCRIPTION

This site is located in the depot's industrial area just south of Building 1A. Analysis of groundwater from previously established monitoring wells has indicated the presence of PCE. Five additional monitoring wells were placed in the U Area to determine size and concentration of the PCE plume.

The result of two years of quarterly monitoring will be discussed with regulatory agencies. Currently only LTM is planned.

As this site is not part of the Federal Facility Agreement, there will be no ROD.

CLEANUP STRATEGY

LTM (performance monitoring) will continue.

STATUS

REGULATORY DRIVER: CERCLA

RRSE RATING: Medium

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	200109	200202
SI	200203	200503
LTM	200504	202103

RC DATE: 200503

IRP No Further Action Sites Summary

AEDB-R #	Site title	Documentation/Reason for NFA	NFA Date
TBAD-002	Landfill Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-003	Ash Pits	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-005	Original Burning Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-006	Borrow Pits	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-008	Oakes Swamp Disposal Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-009	Cyanide Sump	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-010	Cyanide Oxidation Tanks	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-011	Chromium Sump	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-012	Chromium Reduction Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-013	Acid/Alkali Sump	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-014	Surge Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-015	Sulfide Precipitation Pretreatment	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-016	Acid/Alkali Surge Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-017	Chromium Surge Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-018	Overflow/Excess Back Wash Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-019	Original STP	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-020	STP Bar Screen	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-021	STP Parshall Flumme	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD022	STP Primary Settling Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-023	STP Dosing Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-024	STP Secondary Settling Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-025	STP Recirculation Pit	Study complete, No cleanup required	200009

AEDB-R #	Site title	Documentation/Reason for NFA	NFA Date
		per Operable Unit #5 ROD	
TBAD-026	Flash Mix/Floculation Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-027	Final Settling Tank	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD028	Sludge Thickener	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-029	Sand Filter	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-030	STP Chlorine Contact Chamber	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-031	STP Digesters	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-032	Sewage Drying Beds	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-033	Dewatered Sludge/Sludge	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-034	Equalization Basin	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-035	Sewage Sludge Roll Off	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-036	Drum/Dumpster Storage	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD037	Industrial Waste Storage Area Bldg 10C	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-038	Building S 90	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-039	Building S 91	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-040	Building 9	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-041	Banned Pesticide Storage Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD042	Waste Motor Oil/Storage Area, Bldg 15	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-043	Outside Drum Storage, Bldg 86 South Side	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-044	Drum Staging Area/Drum Storage Bldg 1A	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-045	Pesticide Shop	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-046	Radioactive Waste Shelters	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-047	DRMO HW Storage Facility	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-048	Drum Storage - Building 700	Study complete, No cleanup required	200009

AEDB-R #	Site title	Documentation/Reason for NFA	NFA Date
		per Operable Unit #5 ROD	
TBAD-049	Drum Storage - Building 702	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-050	Drum Storage - Building 703	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-051	Drum Storage - Building 10-C	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-052	Drum Storage - Building 23	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-053	Battery Acid Neutralization/Battery Shop	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-054	Photo Lab Building 11	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-055	UXO Area In North End of Installation	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-056	Facility Sanitary Sewers	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-057	Incinerator	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-058	Fire Fighting Training Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-059	Small Arms & Machine Gun Range	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-060	RAD Storage Area	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-061	Barney's Lake/Hummler Run	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-062	NPDES Outfalls	Study complete, No cleanup required	200009
TBAD-063	PCB Transformers	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-064	Coal Pile/Heating Plant	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-065	Sandblasting Unit	Study complete, No cleanup required per Operable Unit #5 ROD	200009
TBAD-066	UST Site Restoration Areas	Study complete, No cleanup required per Operable Unit #5 ROD	200009

IRP Schedule

Initiation of IRP: 1991

Past Phase Completion Milestones

Operable Unit 1

1980
• PA, Jan

1986
• SI, Dec

1989
• RI Report, Feb

1991
• Removal Action (Depot Waterline Extension), Jun

1993
• RI Addendum, Endangerment Assessment, and FS Report, Feb
• Proposed Remedial Action Plan, Sep

1995
• Army Revised Groundwater Treatment Strategy submitted to regulators, Jul
• Area B Soil Source Removal Action, Aug

1997
• Record of Decision, Sep

1998
• Remedial Design, Dec

Operable Unit 2

1990
• PA/SI, Jul

1991
• VS Award, Sep

1994
• Removal Action, Nov

1996
• VS Report, Feb
• Record of Decision, Sep

Operable Unit 3

1990
• PA/SI, Jul

1993
• RCRA Part B Closure, Dec

1996
• Record of Decision, Jul

Operable Unit 4

2000
• Record of Decision, Sep

Operable Unit 5

1998
• 35 NFRAP Sites, Mar

1999
• Closeout Document – 18 NFRAP Sites , Sep

2000
• Closeout Document – 5 Additional NFRAP Sites, Sep
• Record of Decision, Sep

2001
• RD/RA - Remaining Action Sites, Mar

2002
• Five-year Review, Sep

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates: None

Projected Construction Completion Date of IRP and Removal from NPL: 2005

Schedule for Next Five Year Review: 200709

Estimated Completion Date of IRP (including LTM phase): 2021

TOBYHANNA IRP SCHEDULE
(Based on current funding)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
TBAD-001	LTM									*202102*
TBAD-004	LTM									*202102*
TBAD-007	LTM									*202102*
TBAD-067	LTM									*202103*

Prior Year Funds

Total Funding up to FY04: $14,584,000

Year	Site Information	Expenditures	FY Total
FY 05	LTM – TBAD-01	$61K	
	TBAD-04	$28K	
	TBAD-07	$28K	
	TBAD-67	$28K	**$145,000**

Total Prior Year Funds: $14,729,000

Current Year Funds

Year	Site Information	Expenditures	FY Total
FY 06	LTM – TBAD-01	$94K	
	TBAD-04	$25K	
	TBAD-07	$25K	
	TBAD-67	$25K	**$199,000**

Total Funding FY06: $199,000

Total Future Requirements: **$2,345,000**

Total IR Program Cost *(from inception to completion of the IRP)*: **$17,279,000**

Tobyhanna Army Depot

Military Munitions Response Program

MMRP Summary

***Total AEDB-R MMRP Sites/AEDB-R Sites with Response Complete*:** 6/4

AEDB-R SITE TYPES:
2 Firing Ranges
2 Unexploded Munitions/Ordnance
2 Small Arms Ranges

Most Widespread Contaminants of Concern: Metals, Munitions, Explosives, Explosive-residuals

***Media of Concern*:** Soil

Completed REM/IRA/RA: None

Total MMRP Funding:

Prior Years (up to FY05):	$ 469,450
Current Year (FY06):	$ 3,000
Future Requirements (FY07+):	$1,583,000
Total:	$2,055,450

Duration of MMRP:
Year of MMRP Inception: 2002
Year of MMRP RC: 2014
Year of MMRP Completion Including LTM: 2047

MMRP Contamination Assessment

MMRP Contamination Assessment Overview

An Army-wide range inventory was completed in the early 2000s.

Six MMRP sites were identified at TYAD. Since then it was determined that four of the MMRP sites do not need any additional investigation or cleanup, and were closed.

MMRP Cleanup Exit Strategy: Continue LTM at TYAD-001-R-01. Complete additional investigation and possible cleanup at TYAD-002-R-01.

Previous Studies

1995

- Archives Search Report FINDINGS for the former Tobyhanna Artillery Range, US Army Corps of Engineers Rock Island Dist, Sep

2000

- Engineering Evaluation/Cost Analysis Area of Concern 55 UXO Area on Powder Smoke Ridge, Program Management Company, Apr

2005

- Final Site Inspection Report, Malcolm-Pirnie, Mar

Tobyhanna Army Depot

Military Munitions Response Program Site Descriptions

TYAD-001-R-01
Former Artillery Range A

SITE DESCRIPTION

This area is in the northern portion of the installation. It contains a former impact area for an artillery range used during World War I and II, formerly known as Camp Summerall, as well as a small arms and machine gun range and a pistol range used during the 1960s. The area is 478 acres.

TYAD has been partially de-listed from the National Priorities List (NPL or Superfund). The range is Operable Unit 4, also referred to as Area of Concern #55 (AOC #55), of the NPL site. In the ROD dated September 2000, institutional controls were the chosen remedial alternative because the other remedial alternatives were infeasible due to the terrain. The small arms and machine gun and pistol ranges are located within the restricted area of AOC #55 and overlap the firing fan of the former artillery range. The institutional controls at AOC #55 include barbed wire fencing, signage, security patrols, deed restrictions, education, and periodic reviews. The fencing surrounds an area of 800 acres, which includes the entire Former Artillery Range A.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: 2

CONTAMINANTS OF CONCERN:
Metals, Munitions, Explosives, Explosive-residuals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	200207	200305
SI	200309	200503
RA(C)	200501	200510
LTM	200510	203409

RC Date: 200510

An air defense radar facility was built on approximately 20 acres in 1998. The footprint of the radar testing facility and an area of 100 feet around the footprint of the facility were cleared of Unexploded Ordnance (UXO) to a depth of four feet. During the excavation of the footprint of the radar facility, 37 mm projectiles, 75 mm projectiles, 81 mm mortars (one containing white phosphorus), as well as a M38 fuze, a M49 flare, an adapter booster, and US Coast Guard projectiles were discovered. Two water towers are located on the former range within the restricted area, but are fenced so that workers cannot gain access to AOC #55.

A former Small Arms and Machine Gun Range was located in the firing fan of the former Artillery Range. This range was initially used for a 170-meter small arms range in the early 1960s and then as a fixed-position small arms range. The fixed-position range was a mounted machine gun range that fired through an earth-covered concrete tube into an embankment. Its use was discontinued in approximately 1971. This range was also used between 1967 and 1971 for .30 and .50-caliber weapons. The Small Arms and Machine Gun range was closed as part of the September 2000 Final TYAD Closeout Document for Five No Further Action Areas of Concern.

A former pistol range was located south of the Small Arms range and within the former Artillery Range's firing fan. The pistol range was used from approximately 1967 to 1971.

CLEANUP STRATEGY

Institutional controls are being implemented. Munitions and Explosives of Concern (MEC) monitoring will start in FY06 and continue for 30 years.

TYAD-002-R-01
FORMER ARTILLERY RANGE B

SITE DESCRIPTION

This area is in the southwest portion of the installation. It contains the former firing point and part of the firing fan for the artillery range used during World War I and II, formerly known as Camp Summerall. This area is outside of the institutional controls for the majority of the artillery range and is within the developed area of the current TYAD. The area is 179 acres of the range area. No UXO, Discarded Military Munitions, or Munitions Constituent has been identified in this area.

CLEANUP STRATEGY

Pending further investigation and an FS, institutional controls will be implemented. MEC monitoring is planned after institutional controls implementation for 30 years.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: 2

CONTAMINANTS OF CONCERN:
Metals, Munitions, Explosives, Explosive-residuals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	200207	200305
SI	200309	200503
RI/FS	200810	200909
RA(C)	201305	201409
LTM	201710	204709

RC Date: 201409

MMRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
TYAD-001-R-02	FAR-A-2	Study complete, No cleanup required	200503
TYAD-001-R-03	FAR-A-3	Study complete, No cleanup required	200503
TYAD-002-R-02	FAR-B-1	Study complete, No cleanup required	200503
TYAD-003-R-01	Machine Gun Range	Study complete, No cleanup required	200503

MMRP Schedule

Initiation of MMRP: 2002

Past Phase Completion Milestones:

2003
- PA TYAD-001-R-01
- PA TYAD-002-R-01

2005
- RC TYAD-001-R-02,TYAD-001-R-03,TYAD-002-R-02,TYAD-003-R-01
- SI completion TYAD-001-R-01
- SI completion TYAD-002-R-01

Projected ROD/DD Approval Dates: 2014

Projected Construction Completion: 2014

Schedule for Five Year Reviews: None

Estimated Completion Date of MMRP (including LTM phase): 2047

TOBYHANNA MMRP SCHEDULE
(Based on current funding)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
TYAD-001-R-01	LTM									*203409*
TYAD-002-R-01	RI/FS									
	RA(C)									
	LTM									*204709*

MMRP Costs

Prior Years Funds

Total Funding up to FY04: $416,000

Year	Site Information	Expenditures	FY Total
FY 05	SI	$24,450	
	RA	$29,000	**$53,450**

Total Prior Year Funds: $469,450

Current Year Funds

Year	Site Information	Expenditures	FY Total
FY 06	LTM	$3,000	**$3,000**

Total Funding FY06: $3,000

***Total Future Requirements*: $1,583,000**

Total MMRP Program Costs (from inception to completion of the MMRP): **$2,055,450**

RAB Established Date: 22 March 1995

RAB Activities: Review of Work Plans, Remedial Investigations, Ecological Risk Assessments, Proposed Remedial Action Plans, Record of Decisions, and other technical reports.

RAB Funding: $0

RAB Advise: In general, the RAB members have concurred with the actions planned. They have participated in reviewing several reports, including the Closeout, RD Documents, Community Relations Plans, Proposed Remedial Action Plans and RODs.